

PUBLIC CONSULTATION MEETING TO DISCUSS

**Proposed Airborne Toxic Control Measures to Reduce
Diesel Particulate Matter Emissions from In-Use and
New Stationary Diesel-Fueled Engines**



June 5, 2003



California Environmental Protection Agency

Air Resources Board

ATCM Development Process

- **Held Public Workshops**
 - ◆ February 2001 - Discussed Risk Reduction Plan
 - ◆ January 2002 - Presented regulatory concepts
 - ◆ April 2002, September 2002, November 2002, March 2003 - Presented proposed draft regulatory language
- **Coordination with CAPCOA Working Group**
- **Ongoing consideration of verbal and written comments**
- **Control Equipment Demonstration**
- **Test Method Workgroup**

Basic Control Approach to Developing Air Toxic Measures (ATCMs)

- **Establish diesel PM emission standards that are based on the use of best available diesel PM control technologies and lowest-emitting diesel-fueled engines**
- **Consider contribution to overall ambient PM and risk levels, potential near source risk, and the cost of controls when establishing emission standards**

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Summary of Current Requirements: Presentation Overview

- **Summary of current emission standards and hour of operation limits**
- **Discuss in more detail**
 - ◆ **E/S engines under ISC contracts**
 - ◆ **Dual-fueled engines**
 - ◆ **Definition of “Emergency Use”**
 - ◆ **New Agricultural Engines**
 - ◆ **De-rated engines**
 - ◆ **Non-resettable hour meter requirement**

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**Summary of Current Requirements
New Diesel Engines \leq 50 hp
Both Prime and E/S Applications**

DIESEL PM LIMITS (g/bhp-hr)	NMHC/ NOX/CO LIMITS (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION FOR ENGINES MEETING DIESEL PM LIMIT	COMPLIANCE DATES
Off-road Standard	Off-road Standard	Not Limited by ATCM	January 1, 2005

- **“Seller” requirement**
- **Includes new agricultural engines**

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**Summary of Current Requirements
New Diesel Engines $>$ 50 hp
Prime Applications**

DIESEL PM LIMITS (g/bhp-hr)	NMHC/ NOX/CO LIMITS (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION FOR ENGINES MEETING DIESEL PM LIMIT	COMPLIANCE DATES
≤ 0.01	Off-road Standard (Appropriate or Tier 1)	Not Limited by ATCM	January 1, 2005

- **Dual-fueled diesel-pilot digester/landfill gas exempt**
- **Separate standard for new agricultural engines**

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Summary of Current Requirements In-Use Diesel Engines > 50 hp Prime Applications

DIESEL PM LIMITS (g/bhp-hr)	NMHC/ NOX/CO LIMITS (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION FOR ENGINES MEETING DIESEL PM LIMIT	COMPLIANCE DATES	
			OWNS 3 OR LESS ENGINES	OWNS 4 OR MORE ENGINES
≤ 0.01 OR 85% REDUCTION FROM BASELINE LEVELS	If control strategy is not Verified retrofit technology, show no increase from baseline levels	Not Limited by ATCM	<u>PRE-89 THRU 89</u> 1/1/2006 90 TO 96 1/1/2007 96 THRU POST-96 1/1/2008	PRE-89 THRU 89 25% 1/1/2006 50% 1/1/2007 75% 1/1/2008 100% 1/1/2009 90 TO 96 30% 1/1/2007 60% 1/1/2008 100% 1/1/2009 96 THRU POST-96 50% 1/1/2008 100% 1/1/2009

- Dual-fueled diesel-pilot exempt
- In-use agricultural engines exempt

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Summary of Current Requirements New Diesel Engines > 50 hp Emergency Standby Applications

DIESEL PM LIMITS (g/bhp-hr)	NMHC/ NOX/CO LIMITS (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION FOR ENGINES MEETING DIESEL PM LIMIT				COMPLIANCE DATES
		Emergency Use	Non-Emergency Use			
			Emission Testing to show compliance	Initial Installation Start-up (hrs/yr)	Maintenance and Testing (hrs/yr)	
≤0.15 and >0.01	Off-road Standard (Appropriate or Tier 1)	Not Limited by ATCM	Not Limited by ATCM	4.5	100	January 1 2005
≤0.01		Not Limited by ATCM	200			

- Dual-fueled diesel-pilot digester/landfill gas exempt
- ILC contract not allowed
- Separate standard for new agricultural engines

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Summary of Current Requirements In-Use Diesel Engines > 50 hp Emergency Standby Applications

DIESEL PM LIMITS (g/bhp-hr)	NMHC/ NOX/CO LIMITS (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION FOR ENGINES MEETING DIESEL PM LIMIT				COMPLIANCE DATES BY MODEL YEAR OF ENGINE (ILC by January 1, 2005)	
		Emergency Use	Non-Emergency Use			OWN 3 OR LESS ENGINES	OWN 4 OR MORE ENGINES
			Emission Testing to show compliance	Initial Install. Start-up (hrs/yr)	Maintenance and Testing Use (hrs/yr)		
>0.40	If control strategy is not Verified retrofit technology, show no increase from baseline levels	Not Limited by ATCM	Not Limited by ATCM	4.5	18	PRE-89 THRU 89 1/1/2006	PRE-89 THRU 89 25% 1/1/2006 50% 1/1/2007 75% 1/1/2008 100% 1/1/2009
<0.40 and >0.15		Not Limited by ATCM	Not Limited by ATCM	4.5	40	90 TO 96 1/1/2007	90 TO 96 30% 1/1/2007 60% 1/1/2008 100% 1/1/2009
≤0.15 and >0.01 (ILC MINIMUM)		Not Limited by ATCM	Not Limited by ATCM	4.5	100 (INCLUDES ILC HOURS)	96 THRU POST- 96 1/1/2008	96 THRU POST-96 50% 1/1/2008 100% 1/1/2009
<0.01		Not Limited by ATCM	200				

- Dual-fueled diesel-pilot engines exempt
- ILC contract allowed on a restricted basis
- In-use agricultural engines exempt

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In-Use Emergency Standby Engines Currently in ISC Contracts

- **Interruptible Service Contract (ISC):** Electrical customer reduces electrical consumption during peak demand periods at the request of the system operator in exchange for compensation.
- **ARB Policy:** No new E/S engines used for meeting requirements of ISCs.
- **ATCM Allows In-Use E/S Engines** that are in ISCs prior to January 1, 2003, to continue until January 1, 2008, if they meet the following by July 1, 2005 :
 - ◆ ≤0.15 g/bhp-hr diesel PM standard (100 hours), or
 - ◆ ≤0.01 g/bhp-hr diesel PM standard (200 hours)

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Dual-Fueled Engines

- **ATCM exempts dual-fueled diesel-pilot digester gas/landfill gas engines**
 - ◆ Relatively small number of engines
 - ◆ Digester gas poisons emission control equipment
 - ◆ Resource recovery is a benefit
- **ATCM exempts in-use dual-fueled diesel-pilot engines**
 - ◆ Already represent an 85% reduction from an equivalent 100% diesel-fueled engine
 - ◆ AB- 2588 backstop
 - ◆ Will re-evaluate after reviewing inventory data
- **ATCM requires all new dual-fueled diesel-pilot engines to meet emission limits and hour of operation requirements**

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Definition of “Emergency Use”

- **“Emergency Use” means operating an emergency standby engine to mitigate:**
 - ◆ Failure or loss of power or natural gas supply
 - ◆ Failure of internal power distribution system
 - ◆ Pumping of water or sewage overflow
 - ◆ Pumping of water for fire suppression
 - ◆ Powering airport runway lights
 - ◆ Rotating outage

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Inclusion of Emission Limits for New Agricultural Diesel-Fueled Engines

- **New stationary diesel-fueled CI engines used in agricultural operations must**
 - ◆ Use CARB diesel or clean alternative
 - ◆ Meet 0.15 g/bhp-hr diesel PM standard
 - ◆ Meet Off-road Certification standards for other pollutants
 - ◆ Effective January 1, 2005
- **Special consideration for Moyer and EQIP engines prior to January 1, 2008.**
 - ◆ Can be sold to another agricultural operation if engine meets Tier II standards

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Derated Engines

- **ATCM applies to engines with a rated brake horsepower of greater than 50**
- **Current definition of “rated bhp”: maximum continuous rating for an engine as specified by the manufacturer....without taking into account any deratings.**
- **Certified distributors “derate” engines to ≤ 50 hp**
 - ◆ mechanical modifications
 - ◆ new nameplate with derated bhp
- **Staff will re-evaluate definition of rated bhp**

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Non-Resettable Hour Meter Requirement

- **Previous version of ATCM : All engines with a limit placed on their hours of operation required to install a non-resettable hour meter**
- **Current version of ATCM :All engines with a limit placed on their hours of operation required to install a non-resettable hour meter *PLUS those applications that have no hour limitations, but are subject to emission limitations***

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Other

- **Variance**
- **Test Method Evaluation**
- **Cost Analysis**
- **Technology Demonstration**

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Next Steps

- **Continue informal regulatory process**
- **Next Workshop tentatively scheduled for August**
- **Staff plans to present ATCMs to Board in October 2003**

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